VOLUME 62, NUMBER 1 JANUARY–FEBRUARY 1985

iii Instructions to Authors

v Acknowledgment of Reviewers

vi Errata

1 Examination of the Mobilization of Storage Proteins of Wheat Kernels During Germination by High-Performance Reversed-Phase and Gel Permeation Chromatography. *J. E. Kruger* and *B. A. Marchylo*

6 Detection and Gas-Chromatographic Determination of Propionic Acid Added as a Preservative to Corn. *W. M. Lamkin, N. D. Luginsland,* and *Y. Pomeranz*

11 A Comparison of the Catalysis of Starch Components by Isoenzymes from the Two Major Groups of Germinated Wheat α-Amylase. *J. E. Kruger* and *B. A. Marchylo*

19 Effect of Temperature and Alternate Lactate Buffer Systems on Resolution of Wheat Gliadin Proteins by Polyacrylamide Gel Electrophoresis. *G. L. Lookhart, D. B. Cooper,* and *B. L. Jones*

22 Effect of Phytate, pH, and Acid Treatment on the Falling Number of Sound and Weathered Wheats. *J. S. Noll*

25 Endosperm Structural and Biochemical Differences Between a High-Protein Amphiploid Wheat and its Progenitors. *R. L. Gaines, D. B. Bechtel,* and *Y. Pomeranz*

31 Influence of Water Activity and Temperature on Dehulling of Buckwheat. *G. Mazza* and *C. G. Campbell*

35 A Microscopic Study on the Development of a Layer in Barley That Causes Hull-Caryopsis Adherence. *R. L. Gaines, D. B. Bechtel,* and *Y. Pomeranz*

41 Determination of Hardness in Mixtures of Hard Red Winter and Soft Red Winter Wheats. I. Bulk Samples. *Y. Pomeranz, S. Afework,* and *F. S. Lai*

47 Effect of Variations in Tempering on Micromilling of Hard Winter Wheat. *Y. Pomeranz, L. C. Bolte, K. F. Finney,* and *M. D. Shogren*

51 The Quality of Tortillas Containing Whole Sorghum and Pearled Sorghum Alone and Blended with Yellow Maize. *C. E. Choto, M. M. Morad,* and *L. W. Rooney*

55 Fermentation of Water Ferments and Bread Quality. *K. Kulp, H. Chung, M. A. Martinez-Anaya,* and *W. Doerry*

60 Influence of Certain Flour Quality Parameters and Postmilling Treatments on Size of Angel Food and High-Ratio White Layer Cakes. *C. S. Gaines* and *J. R. Donelson*

63 NOTE: Effect of Varying Flour Protein Content on Angel Food and High-Ratio White Layer Cake Size and Tenderness. *C. S. Gaines* and *J. R. Donelson*

66 NOTE: Fermentation of Field Corn at Varying Stages of Maturation. *J. E. VanCauwenberge*

67 NOTE: A Method for Separating Light and Dark Kernels of Winter Wheat (*Triticum aestivum* L.) Based on Density. *M. Fenton, D. M. Anderson, P. A. Thacker,* and *J. P. Bowland*

70 NOTE: Correlations of Sensory and Instrumental Measures of Bread Texture. *P. L. Brady* and *S. M. Mayer*

72 NOTE: A Method for Detecting Adulteration in Durum Wheat Pasta by Polyacrylamide Gel Electrophoresis. *A. C. Burgoon, H. S. Ikeda,* and *S. N. Tanner*

VOLUME 62, NUMBER 2 MARCH-APRIL 1985

75 The Effect of Frost Damage on the Milling and Baking Quality of Red Spring Wheat. *J. E. Dexter, D. G. Martin, K. R. Preston, K. H. Tipples,* and *A. W. MacGregor*

80 Effect of Wet Harvesting on Biodeterioration of Rice. *M. N. Sahay* and *S. Gangopadhyay*

83 Functional Properties of Some European Wheats Grown in Europe and Kansas. *K. F. Finney, E. G. Heyne, M. D. Shogren, L. C. Bolte,* and *Y. Pomeranz*

89 High Performance Liquid Chromatographic Separation of Peptides for Sequencing Studies. *B. L. Jones* and *G. L. Lookhart*

97 High Performance Liquid Chromatography Analysis of Amino Acids at the Picomole Level. *G. L. Lookhart* and *B. L. Jones*

103 Sensory Interactions of Formulations to Mask Potassium Chloride Flavor Using Morton Lite Salt Mixture in White Pan Breads. *M. Stroh, C. S. Setser, B. Bruinsma, M. Shogren,* and *P. A. Redlinger*

108 Determination of Corn Hardness by the Stenvert Hardness Tester. *Y. Pomeranz, Z. Czuchajowska, C. R. Martin,* and *F. S. Lai*

112 Composition and Properties of Pearled and Fines Fractions from Hulled and Hull-less Barley. *A. K. Sumner, A. Gebre-Egziabher, R. T. Tyler,* and *B. G. Rossnagel*

117 Retention of Selected Minerals in Enriched Pasta Products During Cooking. *G. S. Ranhotra, J. A. Gelroth, F. A. Novak, M. A. Bock,* and *R. H. Matthews*

120 Endogenous Alpha-Amylase Inhibitor in Various Cereals. *R. J. Weselake, A. W. MacGregor,* and *R. D. Hill*

124 Effect of Fat and Sugar in Sugar-Snap Cookies and Evaluation of Tests to Measure Cookie Flour Quality. *A. M. Abboud, G. L. Rubenthaler,* and *R. C. Hoseney*

130 Factors Affecting Cookie Flour Quality. *A. M. Abboud, R. C. Hoseney,* and *G. L. Rubenthaler*

134 Evaluating Cookie Spread Potential of Whole Wheat Flours from Soft Wheat Cultivars. *C. S. Gaines* and *J. R. Donelson*

137 Mold Growth and Carbon Dioxide Production During Storage of High-Moisture Corn. *A. Fernandez, R. Stroshine,* and *J. Tuite*

144 Application of High Performance Liquid Chromatography to Analysis of Flavonoids and Phenyl Propenoids. *C. W. Nagel*

148 NOTE: Purification of a Specific Endo-Beta-Glucanase from Bacillus subtilis for Beta-Glucan Quantitation. *G. M. Ballance*

150 NOTE: Soluble Sugars in Five Endosperm Types of Sorghum. *D. S. Murty, U. Singh, S. Suryaprakash,* and *K. D. Nicodemus*

VOLUME 62, NUMBER 3 **MAY–JUNE 1985**

153 Letter from the Editor

154 Iron Status in Experimental Drum-Dried Rice Foods. *R. S. Kadan* and *G. M. Ziegler, Jr.*

158 Saltine Crackers: Changes in Cracker Sponge Rheology and Modification of a Cracker-Baking Procedure. *C. Doescher* and *R. C. Hoseney*

162 Characterization of Oat Species by Polyacrylamide Gel Electrophoresis and High Performance Liquid Chromatography of Their Prolamin Proteins. *G. L. Lookhart* and *Y. Pomeranz*

166 Model Experiments on Hydrophobicity of Chlorinated Starch and Hydrophobicity of Chlorinated Surface Protein. *M. Seguchi*

170 Effect of Wheat Variety, Flour Grinding, and Egg Yolk on Whole Wheat Bread Quality. *P. L. Finney, S. Henry,* and *H. Jeffers*

174 Characterization of Triticale Protein. *C. E. Lupano* and *M. C. Añón*

178 Determination of Hardness in Wheat Mixtures. II. Apparatus from Automated Measurement of Hardness of Single Kernels. *F. S. Lai, R. Rousser, D. Brabec,* and *Y. Pomeranz*

185 Variability in Gliadin Electrophoregrams and Hardness of Individual Wheat Kernels Selected from Foundation Seed on the Basis of Grain Morphology. *G. L. Lookhart, F. S. Lai,* and *Y. Pomeranz*

191 The Effects of *Fusarium graminearum* Infection on Wheat Kernels. *D. B. Bechtel, L. A. Kaleidau, R. L. Gaines,* and *L. M. Seitz*

198 Distribution of Ethylene Dibromide Residues in Whole Corn and Milled Corn Products. *R. A. Anderson, A. J. Peplinski, C. L. Storey, G. N. Bookwalter,* and *L. T. Black*

201 High Performance Liquid Chromatography. How Proteins Look in Cereals. *J. A. Bietz*

213 Elevated Protein-Bound Methionine in Seeds of a Maize Line Resistant to Lysine Plus Threonine. *R. L. Phillips* and *B. A. McClure*

218 Solubility Behaviors of the Minerals, Proteins, and Phytic Acid in Rice Bran with Time, Temperature, and pH. *E. T. Champagne, R. M. Rao, J. A. Liuzzo, J. W. Robinson, R. J. Gale,* and *F. Miller*

223 Measurements of Bread Firmness Using the Instron Universal Testing Instrument: Differences Resulting from Test Conditions. *P. A. Redlinger, C. S. Setser,* and *A. D. Dayton*

227 Gliadin High-Performance Liquid Chromatography and Polyacrylamide Gel Electrophoresis Patterns of Wheat Grown with Fertilizer Treatments in the United States and Australia on Sulfur-Deficient Soils. *G. L. Lookhart* and *Y. Pomeranz*

230 Errata

VOLUME 62, NUMBER 4 JULY-AUGUST 1985

231 The Interactions of Minerals, Proteins, and Phytic Acid in Rice Bran. *E. T. Champagne, R. M. Rao, J. A. Liuzzo, J. W. Robinson, R. J. Gale,* and *F. Miller*

238 Minerals and Phytate in the Analysis of Dietary Fiber from Cereals. III. *W. Frølich* and *N.-G. Asp*

242 Model Studies of Cake Baking. V. Cake Shrinkage and Shear Modulus of Cake Batter During Baking. *M. Mizukoshi*

247 Model Studies of Cake Baking. VI. Effects of Cake Ingredients and Cake Formula on Shear Modulus of Cake. *M. Mizukoshi*

252 Comparative Studies on Cell Wall Preparations from Rice Bran, Germ, and Endosperm. *N. Shibuya, R. Nakane, A. Yasui, K. Tanaka,* and *T. Iwasaki*

258 Effect of Wheat Variety on the Relationship Between Falling Numbers and Alpha-Amylase Activity. *P. L. Finney*

263 Effect of Sugar Type and Flour Moisture on Surface Cracking of Sugar-Snap Cookies. *L. C. Doescher* and *R. C. Hoseney*

267 High-Temperature, Short-Time Extrusion of Wheat Gluten and a Bran-Like Fraction. *J. W. Lawton, A. B. Davis,* and *K. C. Behnke*

272 Studies on Dough Development. II. Effects of Mixing Apparatus and Mixing Speed on the Rheological and Analytical Properties of Heated Dough. *S. Endo, K. Tanaka,* and *S. Nagao*

276 Characterization of Oat (*Avena sativa* L.) Residual Proteins. *L. S. Robert, C. Nozzolillo,* and *I. Altosaar*

279 Selective Reduction of Interpolypeptide and Intrapolypeptide Disulfide Bonds of Wheat Glutenin from Defatted Flour. *Y. Kawamura, Y. Matsumura, T. Matoba, D. Yonezawa,* and *M. Kito*

284 Gluten Proteins with High Affinity to Flour Lipids. *U. Zawistowska, F. Bekes,* and *W. Bushuk*

290 Associations Among Soft Wheat Flour Particle Size, Protein Content, Chlorine Response, Kernel Hardness, Milling Quality, White Layer Cake Volume, and Sugar-Snap Cookie Spread. *C. S. Gaines*

293 The Effect of a Yeast Protein Concentrate and Some of Its Components on Starch Extrusion. *C. S. Lai, A. B. Davis,* and *R. C. Hoseney*

301 Utilization of Durum Bran and Its Effect on Spaghetti. *R. K. Kordonowy* and *V. L. Youngs*

VOLUME 62, NUMBER 5 SEPTEMBER-OCTOBER 1985

SYMPOSIUM: Protein Improvement in Cereals and Oilseeds Through Traditional and Modern Genetic Approaches

309 Introduction. *J. A. Bietz* and *D. D. Kasarda*

310 Polyacrylamide Gel Electrophoresis for Wheat Variety Identification: Effect of Variables on Gel Properties. *K. Khan, A. S. Hamada,* and *J. Patek*

314 One- and Two-Dimensional (Two-pH) Polyacrylamide Gel Electrophoresis in a Single Gel: Separation of Wheat Proteins. *D. Lafiandra* and *D. D. Kasarda*

319 Two-Dimensional Fractionation of the Endosperm Proteins of Bread Wheat (*Triticum aestivum*): Biochemical and Genetic Studies. *P. I. Payne, L. M. Holt, M. G. Jarvis, E. A. Jackson*

327 Improved Separation and Toxicity Analysis Methods for Purothionins. *B. L. Jones, G. L. Lookhart,* and *D. E. Johnson*

332 Improved Procedures for Rapid Wheat Varietal Identification by Reversed-Phase High-Performance Liquid Chromatography of Gliadin. *J. A. Bietz* and *L. A. Cobb*

340 Involvement of Carbohydrates and Lipids in Aggregation of Glutenin Proteins. *U. Zawistowska, F. Bekes,* and *W. Bushuk*

345 Identification of Oat Cultivars by Combining Polyacrylamide Gel Electrophoresis and Reversed-Phase High-Performance Liquid Chromatography. *G. L. Lookhart*

350 Improvement of Wheat Protein by Traditional Breeding and Genetic Techniques. *V. A. Johnson, P. J. Mattern, C. J. Peterson,* and *S. L. Kuhr*

355 Gliadin Electrophoretic Variations in Foundation Arkan Wheat Grown at 16 Kansas Agricultural Experiment Stations in 1983. *G. L. Lookhart*

361 A Nomenclature for Zein Polypeptides Based on Isoelectric Focusing and Sodium Dodecyl Sulfate Polyacrylamide Gel Electrophoresis. *C. M. Wilson*

366 Development of Oat Aleurone Cells and Their Protein Bodies. *D. M. Peterson, R. H. Saigo,* and *J. Holy*

372 Computer-Aided Analysis of Gliadin Electrophoregrams. I. Improvement of Precision of Relative Mobility Determination by Using a Three Reference Band Standardization. *H. D. Sapirstein* and *W. Bushuk*

377 Computer-Aided Analysis of Gliadin Electrophoregrams. II. Wheat Cultivar Identification and Class Comparisons. *H. D. Sapirstein* and *W. Bushuk*

392 Computer-Aided Analysis of Gliadin Electrophoregrams. III. Characterization of the Heterogeneity in Gliadin Composition for a Population of 98 Common Wheats. *H. D. Sapirstein* and *W. Bushuk*

398 Control of Wheat Protein Biosynthesis. *F. C. Greene, O. D. Anderson, J. C. Litts,* and *M.-F. Gautier*

405 The Beta-Turn Conformation in Wheat Gluten Proteins: Relationship to Elasticity. *A. S. Tatham, B. J. Miflin,* and *P. R. Shewry*

413 NOTE: Accelerated Breadmaking Process at Two Fermentation Procedures. *C. F. Fernandes, P. J. Dubash,* and *C. E. Walker*

416 NOTE: The Chemical Composition and Rheological Properties of Flours Milled from Two Major Wheat Varieties Grown in Saudi Arabia. *H. A. Khatchadourian, W. N. Sawaya,* and *M. I. Bayoumi*

418 Erratum

VOLUME 62, NUMBER 6 NOVEMBER-DECEMBER 1985

419 Influence of Germination on Wheat Quality. III. Modification of Flour Lipid. *O. M. Lukow, F. Bekes,* and *W. Bushuk*

423 Effect of Whole Yeast and Various Fractions on Some Properties of Extruded Starch. *C. S. Lai, A. B. Davis,* and *R. C. Hoseney*

427 Influence of Nitrogen Fertilization on the Physicochemical and Functional Properties of Bread Wheats. *O. Paredes-López, M. M. Covarrubias-Alvarez,* and *J. Barquín-Carmona*

431 Noodles. II. The Surface Firmness of Cooked Noodles from Soft and Hard Wheat Flours. *N. H. Oh, P. A. Seib, C. W. Deyoe,* and *A. B. Ward*

437 Noodles. III. Effects of Processing Variables on Quality Characteristics of Dry Noodles. *N. H. Oh, P. A. Seib,* and *D. S. Chung*

441 Noodles. IV. Influence of Flour Protein, Extraction Rate, Particle Size, and Starch Damage on the Quality Characteristics of Dry Noodles. *N. H. Oh, P. A. Seib, A. B. Ward,* and *C. W. Deyoe*

447 Model Wheat Starch Systems Heated by Microwave Irradiation and Conduction with Equalized Heating Times. *B. J. Zylema, J. A. Grider, J. Gordon,* and *E. A. Davis*

454 Experimental Micromilling: Reduction of Tempering Time of Wheat from 18–24 Hours to 30 Minutes. *K. F. Finney* and *L. C. Bolte*

458 Mechanical Dough Development—Dough Water Level and Flour Protein Quantity. *P. K. Skeggs*

463 Hardness of Winter Wheats Grown Under Widely Different Climatic Conditions. *Y. Pomeranz, C. J. Peterson,* and *P. J. Mattern*

467 Distribution of Deoxynivalenol in Soft Wheat Mill Steams. *L. M. Seitz, W. T. Yamazaki, R. L. Clements, H. E. Mohr,* and *L. Andrews*

470 Protein-Rich Alcohol Fermentation Residues from Corn Dry-Milled Fractions. *Y. V. Wu, K. R. Sexson,* and *A. A. Lagoda*

474 NOTE: Shortening Falling Number Analysis Time for Measuring the Sprout Damage of Wheat at Harvest. *H. Perten*

476 NOTE: Retention of Selected B Vitamins in Cooked Pasta Products. *G. S. Ranhotra, J. A. Gelroth, F. A. Novak,* and *R. H. Matthews*

478 NOTE: Discrimination Between Arthur and Arkan Wheats by Image Analysis. *I. Zayas, Y. Pomeranz,* and *F. S. Lai*

481 *Cereal Chemistry* Editors and Staff

483 Author Index, Volume 62

485 Subject Index, Volume 62

489 Contents Index, Volume 62